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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/252,034	02/18/99	HOSHINO	WN-1979

000466 LM31/0911
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EXAMINER

AHMED, S

ART UNIT PAPER NUMBER

2723

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DATE MAILED: 09/11/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/252034

Applicant(s)

Satoshi Hoshino

Examiner

S. Ahmed

Group Art Unit

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—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-19 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-19 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____.

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3
- ☒ Notice of References Cited, PTO-892
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

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Claim Objections

1. Claim 15 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 15 recites the same limitations of claim 13 that claim 15 depends from.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Akihiro Shimizu, et al. [Japanese Laid-Open Publication No. 58-201178].

As to claim 1, Shimizu discloses a device for detecting a fingerprint of a fingertip placed on a contact surface of a fingerprint input section (Fig. 1, items 1, 2) comprising:

a moving element for moving the contact surface when the fingertip is placed on the contact surface [spring 3, permits the prism 2 to move when finger 1 is pressed against the prism (see Fig. 1, page 4, lines 4-20);

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a lock mechanism for fixing said contact surface when said contact surface is moved to predetermined position [metal bodies 11A and 11B come in contact due to contraction of the spring and prism 2 (contact surface) is stopped and does not move any further (i.e. locked) (see Figs 2(a) and Fig.9); and

a detecting unit for detecting the fingerprint when said contact surface is fixed by said lock mechanism to said predetermined position [when the prism 2 is stopped by the metal embodies 11A and 11B at a certain range, the pressure sensitive part 4, is switched on and a signal is sent to a controller to drive an image sensor part 7 to capture a fingerprint image (Fig. 1, page 4, line 4-page 5, line 12).

As to claim 2, Shimizu further discloses wherein:

said lock mechanism comprises a switch for producing a signal when said contact surface is fixed to said lock mechanism (Fig. 1, page 4, lines 4-24); and

said detecting unit is energized to detect the fingerprint when said detecting unit receives said signal from said switch (Fig. 1, page 4, line 24-page 5, line 11).

As to claim 3, Shimizu further discloses, wherein said moving element comprises an energizing member which withstands movement of said contact surface to make a pressure imposed onto said contact surface substantially uniform until said contact surface is fixed to said predetermined position [spring 3 withstands movement of the prism 2, until the prism is stopped at a certain position when metal bodies 11A and 11B come in contact due to contraction of the spring and prism 2 (see Figs 1, and 2 (a)].

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As to claim 4, Shimizu further discloses, wherein said moving element comprises an energizing member which withstands movement of said contact surface to make a pressure imposed onto said contact surface substantially uniform until said contact surface is fixed to said predetermined position [spring 3 withstands movement of the prism 2, until the prism is stopped at a certain position when metal bodies 11A and 11B come in contact due to contraction of the spring and prism 2 (see Figs 1, and 2 (a))].

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-10, 12-16, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akihiro Shimizu, et al. [Japanese Laid-Open Publication No. 58-201178] in view of Itsumi et al (U.S. Patent 5,559,504).

As to claim 5, Shimizu does not disclose, comprising:

a memory for storing a sequence of fingerprint data signals, which is detected from a fingertip; and

means for comparing a fingerprint of the fingertip placed currently on said contact surface with the fingerprint data signal sequence stored in said memory.

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Itsumi discloses a device for performing identification by sensing the fingerprint of a finger, the device comprising a fingerprint sensor, a memory for storing the individual fingerprint data pattern, and an identification unit for comparing the input pattern with the pattern stored in advance (Fig. 20, items 51, 52, Fig. 23, s 12, col. 13, lines 4-20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Itsumi's teachings to modify Shimizu's device by storing in advance the individual fingerprint data pattern and comparing the input pattern with the pattern stored in advance in order to protect a system that can be started only by an authorized person and arrange the system in a small data volume with a simple algorithm thereby shortening the time required for the whole signal processing and obtain a compact system (see col.3, lines 37-41).

As to claims 6-8, refer to claim 5, rejection.

As to claim 9, Shimizu does not disclose, wherein said detecting unit comprises a solid-state image sensor for scanning a fingerprint image into a sequence of data signals.

Itsumi discloses a device for performing identification by sensing the fingerprint of a finger, the device comprising a fingerprint sensor, the sensor is a printed substrate material (solid-state image sensor) (col.5, line 66-col. 6, line 11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Itsumi's teachings to modify Shimizu's device by using solid-state fingerprint image sensor in order to achieve a reliable accurate sensor that is not damaged by body fluid (i.e sweat) secreted from the finger tip to detect

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the fingerprint (see col. 6, lines 5-6) and protect a system that can be started only by an authorized person.

As to claim 10, Shimizu does not disclose, wherein said detecting unit comprises:

a converting circuit to convert a variable pressure from the fingertip into a variable electric resistance; and

a measuring circuit to measure said variable electric resistance.

Itsumi discloses a device for performing identification by sensing the fingerprint of a finger, the device comprising a fingerprint sensor, the fingerprint sensor comprises a number of linear electrode array, when a finger is pressed against the contact electrodes the resistances among the linear contact electrodes are changed (variable resistance) in accordance with the amount of projection of the skin surface of the finger, the resistances are sequentially read from the respective electrode pad and converted into a one dimensional resistance signal (col. 6, lines 12-61). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Itsumi's teachings to modify Shimizu's device by converting a variable pressure from the fingertip into a variable electric resistance and measuring the variable electric resistance in order to protect a system that can be started only by an authorized person and arrange the system in a small data volume with a simple algorithm thereby shortening the time required for the whole signal processing and obtain a compact system (see col.3, lines 37-41).

As to claim 12, Itsumi further discloses an electric apparatus [a computer] which executes a predetermined operation and which includes the fingerprint device, wherein said electric

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apparatus is powered when the fingerprint data signal sequence of the fingertip placed currently on said contact surface is stored in said memory [the power supply of the computer body is enabled only when the input fingerprint matches a fingerprint registered (stored in the memory in advance) (col. 12, lines 49-61, col.13, lines 4-11)].

As to claim 13, Itsumi further discloses, wherein the device is operable as a power switch [the power supply of the computer body is enabled by the fingerprint sensor col.13, lines 4-11)].

As to claim 14, Itsumi further discloses an electric apparatus [computer] which executes a predetermined operation and which includes the fingerprint device, wherein said electric apparatus is powered when the fingertip placed currently on said contact surface is coincident with the fingerprint data signal sequence stored in said memory [the power supply of the computer body is enabled only when the input fingerprint matches a fingerprint registered (stored in the memory in advance) (col. 12, lines 49-61, col.13, lines 4-11)].

As to claim 15, Itsumi further discloses, wherein the device is operable as a power switch [the power supply of the computer body is enabled by the fingerprint sensor col.13, lines 4-11)].

As to claim 16, Itsumi further discloses, a doorkeeper apparatus which controls a door lock mechanism [car door lock] and which includes the fingerprint device, wherein said doorkeeper apparatus opens a door when the fingerprint data signal sequence of the fingertip placed currently on said contact surface is stored in said memory (Fig. 31, and col. 16, lines 34-49).

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As to claim 18, Itsumi further discloses, a doorkeeper apparatus which controls a door lock mechanism [car door lock] and which includes the fingerprint device, wherein said doorkeeper apparatus opens a door when the fingertip placed currently on said contact surface is coincident with the fingerprint data signal sequence stored in said memory (Fig. 31, and col. 16, lines 34-49).

6. Claims 17, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akihiro Shimizu, et al. [Japanese Laid-Open Publication No. 58-201178] in view of Itsumi et al (U.S. Patent 5,559,504) as applied to claims 16 and 18 above and further in view of Heinz Lubke (DE 29 52 212).

As to claim 17, Itsumi further discloses, a doorkeeper apparatus which controls a door lock mechanism [car door lock] and which includes the fingerprint device (Fig. 31, and col. 16, lines 34-49). Itsumi does not disclose that the door is a building door. However it is well-known in the art and conventional to use fingerprint sensor for door locks on building doors (Official Notice). Itsumi does not disclose, wherein the device is operable as a doorbell switch.

Lubke discloses a lock that uses a switch to control a door lock on a house door or an apartment door. The switch is operated via the doorbell push-button, only the bell button need to be on the house door (Abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Lubke's teachings to modify the combined device of Shimizu and Itsumi by using a fingerprint sensor on a doorbell switch in order to simplify and

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reduce the cost of the system by using inexpensive doorbell push-button to control the lock as well as the attendant difficulties during the opening of the door can be avoided.

As to claim 19, refer to claim 17 rejection.

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akihiro Shimizu, et al. [Japanese Laid-Open Publication No. 58-201178] in view of Tsikos (U.S. Patent 4,353,056).

As to claim 11, Shimizu does not disclose , wherein said detecting unit comprises:
a converting circuit to convert a variable pressure from the fingertip into a variable capacitance;
a measuring circuit to measure said. variable capacitance.

Tsikos discloses a fingerprint sensor that contains a large number of small capacitors, the capacitance of the capacitors is locally changed according to the ridge/valley pattern of the finger (col. 1, line 62-col. 2, line 8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Tsikos's teachings to modify Shimizu's device by using a variable capacitance fingerprint sensor instead of the optical fingerprint sensor in order to achieve a fingerprint sensor that is reliable, accurate and of simpler structure than optical techniques that require a high amount of sophisticated equipment (col. 1, lines 23-39).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Samir Ahmed whose telephone number is (703) 305-9870. The examiner can normally be reached on Monday to Friday from 8:00 A.M. to 5:00 P.M.

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The fax number of this Group 2757 is (703) 308-5397 or 308-9051. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Au, Amelia can be reached on (703) 308-6604. The fax phone number for this Group is (703) 306-5406.

SA

9/1/00


SAMIR AHMED
PATENT EXAMINER